Name:

at1113exam: Expand, factor, and solve quadratics (v339)

1. Expand the following expression into standard form.

$$(9x + 2)^2$$

$81x^2 + 18x + 18x + 4$

$81x^2 + 36x + 4$

2. Expand the following expression into standard form.

$$(2x - 7)(3x - 5)$$

$6x^2 - 10x - 21x + 35$

$6x^2 - 31x + 35$

3. Solve the equation.

$$(5x + 9)(7x - 2) = 0$$

$x = \frac{-9}{5}$ $x = \frac{2}{7}$

4. Expand the following expression into standard form.

$$(2x + 3)(2x - 3)$$

$4x^2 - 6x + 6x - 9$

$4x^2 - 9$

5. Solve the equation with factoring by grouping.

$$15x^2 + 18x + 20x + 24 \;=\; 0$$

$$(3x + 4)(5x + 6) = 0$$

$$x = \frac{-4}{3} \qquad x = \frac{-6}{5}$$

6. Solve the equation.

$$5x^2 + 18x + 26 \;=\; 2x^2 - 5x - 4$$

$$3x^2 + 23x + 30 = 0$$

$$(3x + 5)(x + 6) = 0$$

$$x = \frac{-5}{3} \qquad x = -6$$

7. Factor the expression.

$$x^2 - 14x + 48$$

$$(x - 6)(x - 8)$$

8. Factor the expression.

$$49x^2 - 81$$

$$(7x + 9)(7x - 9)$$